

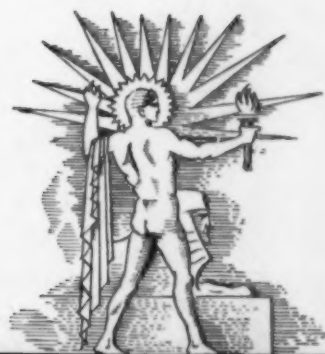
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JUN 16 1931

# SCIENCE NEWS LETTER

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THE WEEKLY SUMMARY OF CURRENT SCIENCE.



JUNE 13, 1931

Albino Twins Surprise Robin Parents

See Page 373

A

SCIENCE SERVICE PUBLICATION

## SCIENCE NEWS LETTER

VOL. XIX

No. 531

The Weekly  
Summary ofCurrent  
Science

Published by

## SCIENCE SERVICE

The Institution for the Popularization of Science organized under the auspices of the National Academy of Sciences, the National Research Council and the American Association for the Advancement of Science.

Edited by WATSON DAVIS

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## DO YOU KNOW THAT

The Bermuda Islands are the high points of a submerged mountain on the ocean floor.

Very young calves in the dairy herd at Cornell University are muzzled, so that they cannot eat unsuitable snacks between their regular meals.

Large mirrors near the top of lamp posts have been installed at some street crossings in Brussels, to show approaching motorists what the traffic will be at the crossing.

Old-fashioned fleece lining, the sort used in winter underwear, is now stiffened with starch, baked in molds, dyed black, and it becomes a radio loud speaker.

New hose equipment makes it possible to direct a stream of water around a corner, thus helping firemen to reach some fire spots more effectively.

It has been found that young wild animals taken from their mothers and placed in zoos have a tendency to rickets.

To decrease the breakage of yarn, knitting mills are aided by the artificial control of weather by refrigerating systems.

The German inventor, Anton Flettner, has invented a long, 11-wheel truck designed on the principle of the Flettner ship rudder.

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Science Service presents over the radio, an address

## POISON IVY AND WHAT TO DO ABOUT IT

By Dr. James F. Couch, of the U. S. Department of Agriculture, who has made exhaustive studies of many poisonous plants, and has given special attention to this weed that perhaps makes more trouble than all the rest put together.

Friday, June 19, at 2:45 P. M. Eastern Standard Time

Over Stations of

The Columbia Broadcasting System

## GEOLOGY

# Rocks Disclose Their Ages After Treatment With Acid

New Method Distinguishes Between Limestones That Look Alike and is Valuable in Mining and Oil Prospecting

**R**OCKS that cannot be told apart as they are dug out of the ground can be made to disclose their ages and geological kinships by dissolving away most of their substance with hydrochloric acid and examining what is left under a low-power microscope. This method of analysis by insoluble residues has been developed by H. S. McQueen of the Missouri Bureau of Geology and Mines, working under the direction of Dr. H. A. Buehler, State Geologist.

The development of the method was brought about by the presence of quantities of limestone rock from deep wells and other borings. All the samples looked pretty much alike, though it was known that they must be of very different natures and geologic ages. The masking similarity was due to the presence of the limestone matrix itself, in which there were none of the fossil casts that are the usual dating-tags which the geologist commonly uses in identifying his finds. Following hints given by earlier workers on the same problem, Mr. McQueen undertook to get rid of the featureless limy matrix by dissolving it in hydrochloric acid, so that he might concentrate his study on the bits of stuff buried in it that are not soluble in the acid.

The method has worked to perfection, he reports. Each type of limestone, indistinguishable to ordinary examination, yields an insoluble residue of particles that is absolutely characteristic for that particular type and unlike the residues of other types. One limestone will have fine sand particles in it, another will contain coarser sand particles of a different color, or perhaps bits of shale, chert, or tiny round pebbles known as oolites, or minute fossil shells.

A peculiar type of particles, whose existence has never before been reported, was found in some of the dolomites. These are thin walls of silica that have been built up around dolomite crystals, and when the latter are dissolved out by the acid a spongy or lace-like mass which shows the cast of the dolomite remains. Since these casts

have the characteristic shape of such crystals, Mr. McQueen has given them the name "dolocasts." Dolomites from different beds have yielded different types of dolocasts upon treatment with acid, and these have helped in their identification.

Mr. McQueen has found his method of value in guiding various kinds of economic enterprises dependent on geological knowledge, such as mining, oil-seeking and deep drilling for water. He has also run cross-section lines in several directions through the state of Missouri, adding materially to the general geological knowledge of the region.

*Science News Letter, June 13, 1931*

## MEDICINE

## Coming Epileptic Attacks Predicted From Charts

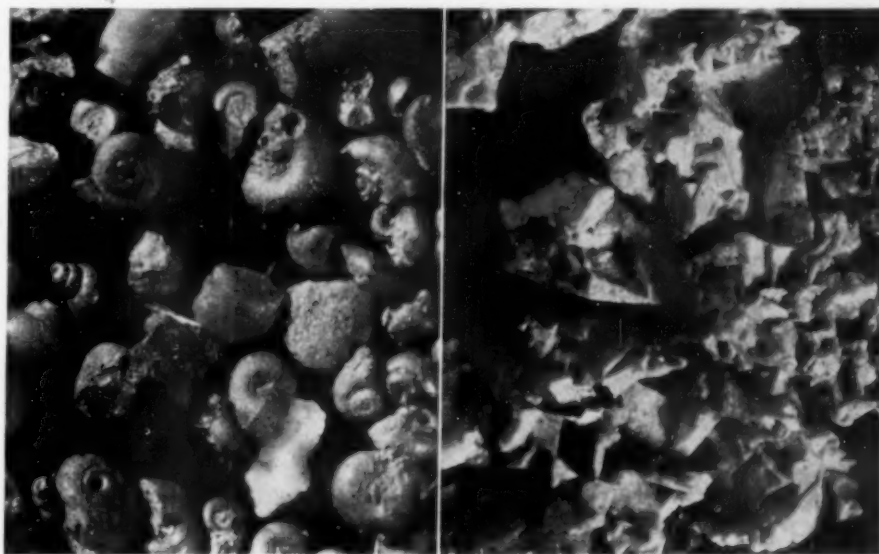
**K**EEPING records of every epileptic patient, every hour of the day and night, every day in the year is the arduous task undertaken at the Colony for

Epileptics at Cambridge, Minnesota. Dr. Theodora Wheeler, of Rochester, Minnesota, reported to the American Psychiatric Association in Toronto last week that for three years such records have been kept concerning one hundred patients, and now the program is to include a chart of this sort for every epileptic.

From these charts it is possible to trace the rhythmic cycle which many patients follow. It becomes possible to forecast attacks and to do whatever is possible to avert them. Some patients are attacked by convulsive seizures only in the day, others at night. Some suffer attacks at a certain hour, and in some the pattern of the disease alternates from one interval to another.

New investigations shedding light on the relationship of the condition of blood to epileptic seizures were reported by three Massachusetts physicians who have been working together. The physicians, Drs. M. B. Hodskins and Riley H. Guthrie, of Palmer, and Dr. J. Z. Naurison, of Springfield, stated that a low percentage of water in the bodily tissues is favorable to relief from epileptic attacks; various methods of treating epilepsy have this one factor in common, lessening the water content. It is interesting that in diabetes, a disease which favors dehydration, the incidence of epilepsy is surprisingly low, the physicians commented.

Because no one has heretofore investigated the problem, the three doctors have been studying the volume of the blood in epileptic patients before, dur-



**AFTER THE LIMESTONE IS DISSOLVED**

*Insoluble residues, resistant to the action of hydrochloric acid, remain to tell the age and affiliations of the formation under examination. Through the microscope the geologist sees minute shells (left), lacy siliceous "dolocasts" (right), and sand grains, shale flakes, or other characteristic inclusions.*



ing, and after convulsive seizures. A decrease in the blood volume was found during the convulsive state, and a large number of other records have been made, which the physicians hope will give new information on the funda-

mental character of epilepsy. The understanding of the abnormal changes in the water content of the blood may also lead to better methods of dehydrating the epileptic patient, they reported.

*Science News Letter, June 13, 1931*

#### PSYCHOLOGY

## Humor Saved Lincoln From Serious Mental Disease

### Study Presented Before Psychiatrists Classifies Famous Civil War President as a Schizoid-Manic Type

**L**INCOLN'S famous sense of humor saved him from being swept away by the strong forces of his mental make-up, Dr. A. A. Brill, psychoanalyst of New York, declared in a paper on the personality of the great Civil War President. This paper was read before the American Psychiatric Association at Toronto in spite of protests from some members.

Dr. Brill declared emphatically that his study of Lincoln is entirely scientific with no thought of being derogatory to one of America's eminent statesmen. Far from implying that Lincoln was insane, Dr. Brill's conclusion is that Lincoln succeeded in maintaining his mental integrity in circumstances which would have dragged a less strong personality down into mental disease.

The psychoanalyst classifies Lincoln as a schizoid-manic type. Schizoid to the analyst means a shut-in, thoughtful type of personality. Manic means inclined to moods of buoyancy. Dr. Brill has studied George Washington's type, concluding that he was a schizoid, contrasting with Roosevelt, who was manic.

Such traits are conspicuous in mentally diseased persons, where the tendencies become exaggerated and uncontrolled. In normal persons the traits exist but less noticeably. Lincoln was pulled constantly in two directions by his conflicting shut-in and buoyant tendencies, Dr. Brill showed. He saved himself from being swept away by these strong forces by his famous sense of humor. The funny stories he told and his jesting attitude toward serious problems were his successful way of rising above an existence which he found so distressingly full of melancholy problems. Dr. Brill called Lincoln's jesting the safety valve which kept him from being torn apart by two distinct forces of his personality.

Dr. J. T. Moreno of New York suggested that Lincoln might have been playing an assumed role, when he jested at crises. He protests strongly that it is unfair for a psychiatrist to analyze the character of a man now dead. Dr. Brill had taken the position that when a noted man's friends and contemporaries leave stories about him, the generations that follow have a right to accept the record, using judgment as to the accuracy of the facts.

"Something is fundamentally wrong with the theory of psychoanalysis," Dr. Moreno states, "and the more unusual the personality, the more dangerous it is to apply the accepted formula as valid."

Most of the membership of the

American Psychiatric Association accepted Dr. Brill's carefully prepared study of Lincoln as a scientific contribution of merit. The president of the association, Dr. W. M. English of the Ontario Hospital at Brockville, said that he saw nothing in Dr. Brill's paper of which to complain.

Much of Lincoln's emotional difficulties with life can be traced to his father, who ill-treated him, Dr. Brill showed, pointing out that normality so-called depends altogether on a son's adjustment to his parents, especially the father.

"The whole future adjustment of the son to his teachers, employers, and the state depends on his early adjustment to his father," the psychoanalyst declared.

*Science News Letter, June 13, 1931*

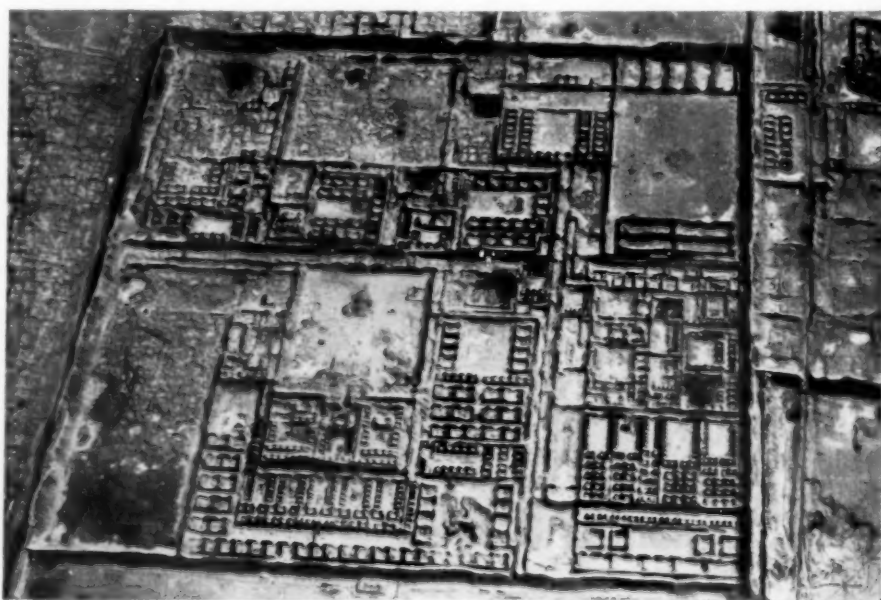
#### ELECTRICITY

## Cost of Electricity Read Directly in Cents Per Hour

**A**N ELECTRIC meter which anyone can read at a glance and readily understand is being used by the National Rural Electric Project, College Park, Md. It reads directly in cents' worth of electricity consumed per hour as well as in kilowatt hours, the engineers' unit.

The meter is designed especially for use in demonstrations before farmers, to show concretely the cost of operating farm equipment by electric power.

*Science News Letter, June 13, 1931*



LIKE THE PLAN OF A MODERN CITY

Is the pattern made on the sun-baked wastes of Peru by the crumbling ruins of Chan Chan, ancient capital of the Chimú people. This is a close-up aerial view taken by the Shippee-Johnson expedition of the walled palace of the Grand Chimú, whose kingdom was overrun by the Incas just before the Spanish conquest.

SURGERY-PHYSICS

# Mutes Given Natural Speech By Improved Voice Box

**Artificial Larynx Removes Dread of Loss of Speech Following Operation for Cancer of the Throat**

**A**N ARTIFICIAL voice box which works so perfectly that it gives the effect of natural speech to a listener in an adjoining room has been devised by Dr. Charles Sheard of the Mayo Foundation. The instrument is used by persons who have lost their natural voice box, or larynx.

The artificial larynx is said to give better results and to be more easily used than any of the previously devised ones. It even permits of some modulation of the voice.

The instrument is a voice-saving device for sufferers from cancer of the throat who have undergone a life-saving operation. The operation is radical and often destroys the vocal apparatus. After this operation, the patient must breathe through an opening in the neck, and is unable to speak.

In the early stages of the disease, when the radical operation offers a practical certainty of cure, sufferers have often hesitated because they dreaded the loss of their voices. Delay has usually allowed the disease to progress to a point where cure is impossible. With the fear of future silence removed, sufferers are apt to submit to operation early, while there is still a chance of cure.

The artificial larynx is strapped over the opening in the neck made during the operation. It receives air which it sets into vibrations similar to those caused by the vocal chords. This vibrating column of air is carried to the mouth by a small tube and there modified into human speech by the lips and tongue.

Difficulties in modulating the pitch and tone-intensity have been eliminated in the instrument devised by Dr. Sheard. The vibrating reed is made of thin, hard rubber and is removable. This is a great advantage, enabling easy and quick replacement in case the reed is broken, Dr. Sheard pointed out. The tone of the reed is regulated by its length.

"This ensemble is such that the user can carry the artificial larynx in a pocket so that he can at will pick it up, apply

to the neck and use for speech," Dr. Sheard said in describing the apparatus.

Fortunately few persons require an artificial larynx. Cancer of the throat, the only condition requiring removal of the vocal apparatus, is of relatively rare occurrence.

*Science News Letter, June 13, 1931*

ORNITHOLOGY

## Twin Albino Robins Hatched With Normal Bird

See Front Cover

**T**WO ALBINO ROBINS, highly interesting and rather rare oddities in the bird world, have been watched from hatching to early maturity at the home of H. D. Shaw of Grinnell, Iowa, and had their pictures taken by Miss Cornelia Clarke, nature photographer.

"The nest was built high up on the ledge of the porch where it was sheltered and partly hidden by the vines," Miss Clarke writes. "There were three



**MUTES SPEAK MECHANICALLY**

*A man who would otherwise remain dumb all his life is enabled to talk with this mechanical larynx.*

eggs in the nest. Two hatched the albinos and the third an ordinary brown robin. The parents were normal in every respect except that the mother robin had two white tail feathers that were plainly visible when she was in flight. It is a curious circumstance that a white robin was seen near the Shaw home for several weeks the summer before the albinos were hatched."

*Science News Letter, June 13, 1931*

PHYSIOLOGY

## Would Explain Deafness by Study of Ears After Death

**A** PLEA to save the ears of deafened persons for scientific study after death, in the hope of learning more about deafness, its cause and possible cure or prevention, was made by Dr. E. W. Hagens of Chicago at the meeting of the American Federation of Organizations for the Hard of Hearing.

"Certain types of deafness, certain changes in the ear have been and still are very imperfectly understood," Dr. Hagens said. "It is easily seen how difficult it is to study these changes that are going on in the temporal bone during life. We cannot see into the depths of the inner ear as the eye may be examined, nor can this part of the ear be

operated on or removed except its function be destroyed."

Study of the anatomy both of normal ears and of ears that have lost the hearing function in various degrees will, it is hoped, teach scientists exactly what changes occur in certain types of deafness, what the causes are, and possibly how the condition may be relieved or prevented.

Material for such study is much more easily obtained in Europe than in the United States, Dr. Hagens pointed out. However, such investigations are being made in at least three universities in this country, Chicago, Northwestern, and Johns Hopkins.

*Science News Letter, June 13, 1931*



THOUSANDS OF COLORS; NO TWO ALIKE

## STATISTICS

## Death and Loss of Sight Are Held to be of Equal Value

**A** TABLE for calculating degrees of incapacity, which answers the question as to whether an armless or a legless man is more disabled, has just been published by the Association des Industriels de France.

Accident statistics obviously call for some table of relative values, but it seemed impossible to express mathematically the incapacities resulting from accidental injuries.

Permanent disablement of three fingers is equal in value to permanent disablement of one thumb and one finger, according to the French table. This type of injury is equivalent to the loss of 1,200 work days. The values for disablement are given in terms of percentage of total. In this table death and permanent total disablement have each a value of 100.

Loss of sight in both eyes also has a value of 100. Loss of sight in one eye is 30. Loss of hearing in both ears is 50, loss of hearing in one ear, 10. Loss of one leg above the knee is 75, or three-fourths of total disablement, but loss of one leg at or below the knee is 50, one-half of total disablement. Permanent disablement of one thumb and four fingers has the same value as loss of one foot, 40. The loss of time in work days for these two injuries is given at 2,400. For total disability, loss of

time in work days is given as 6,000.

The table gives values for 23 types of injury.

This matter of evaluating accidental injuries has been the subject of discussion by International Labor Office Conferences, but no convention has yet been adopted.

*Science News Letter, June 13, 1931*

## ASTRONOMY

## Astronomers Plan Locations For 1932 Eclipse Observatories

**I**N ORDER to determine the best locations for temporary observatories that will be erected to photograph the eclipse of the sun on August 31, 1932, members of the American Astronomical Society's eclipse committee will soon make a study of the eclipse path across New England and Canada.

Speaking to a Science Service representative, Dr. Frederick Slocum, director of the Van Vleck Observatory, of the Wesleyan University at Middletown, Conn., explained that the southern edge of the eclipse path extends from Montreal to Cape Cod, and that the path is about a hundred miles wide. It includes

## PHYSICS

## Artist Paints Spectrum of Recently Found Element

**R**HENIUM, element number 75, which was discovered a few years ago in Germany has had the portrait of its spectrum painted at the U. S. Bureau of Standards in Washington by Charles Bittinger, noted artist. Mr. Bittinger is working in the laboratory of Dr. W. F. Meggers who has measured more than 2,000 new lines of light in rhenium's spectrum.

If this picture were reproduced in color, each of the many vertical lines on Mr. Bittinger's canvas would appear in a different hue or shade. In fact, the spectrum of rhenium, like the spectra of all elements, contains thousands of lines, no two of which are exactly alike in color.

These lines represent different rates of the vibration going on within an atom of an element. To find actually what these colors are, the atoms must be excited, by subjecting a bit of the substance to heat, electricity or some other form of energy. Light from the hot element passed through a prism will be broken up into the myriad of many-colored lines, just as light from the sun passed through a prism is broken up into the colors of the rainbow.

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Night flying has been introduced for the first time regularly on a British commercial air route.

popular vacation spots in Maine, New Hampshire and Vermont.

The center line, along which the duration of the eclipse will be longest, about a hundred seconds, passes close to Mt. Washington, but weather records show that the top of the mountain is apt to be cloudy in the afternoon, when the eclipse occurs.

For six years Dr. Slocum has been gathering weather records from points along the path of totality. These records indicate that the chances for a clear sky are a little better than fifty per cent, practically all along the line.

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ORNITHOLOGY

# The Toucan: The Magpie of Brazil

## "A Classic Of Science"

### A Traveller Brought Gesner the Beak of a Strange Bird From a Far Country to Describe in his Story of Animals

C O N R. GESNERI TIGVRINI,  
*Medicinae et Philosophiae Professoris  
in Schola Tigurina, HISTORIAE  
ANIMALIUM Liber III qui est de  
Avium natura. Francofurti, Ex officina  
Typographica Egenolphi Emmelij, M.  
DC.XVII.*

(History of Animals, Book III which  
is about the nature of Birds, by Conrad  
Gesner of Tigurina, Professor of Medi-  
cine and Philosophy in the School of  
Tigurina. Frankfort, 1617.)

SHOW here the Brazilian magpie,  
whose beak John Ferrerius, that  
most learned of men, has given me;  
the rest of the body I have added from  
the description published by Andreas  
Thevetus Gallicus of Antarctic Gaul.  
This enormous beak (says Ferrerius) is  
actually that of a bird brought from  
the region of Brazil, not any larger (as  
they report who have returned from  
that place) than our magpie.

The man who brought me this beak  
reports that the bird feeds upon pep-  
pers, with which it gorges itself most  
voraciously, but it does not pluck any  
except for its immediate needs. It will  
endure a scarcity of peppers in the re-  
gions where it dwells, rather than  
gather them from newer trees.

And I am convinced of the great im-  
portance of peppers to them for those

tamed when young are injured by not  
getting them. And a great many other  
things are reported about them, but I  
cannot easily tell whether all are true.

#### Almost Transparent Beak

He who sent this to me says that the  
skin of the breast is distinguished by  
feathers of the most splendid and beau-  
tiful gold or saffron color (the rest of  
the body is black, except that the base  
and tip of the tail are red). Andreas  
Thevetus states that the beak is wider  
and longer than the rest of the body:  
which I can believe the more readily  
since it is very thin like a membrane  
and almost transparent, very light and  
hollow, and able to hold air inside it:  
for which reason it has this peculiarity,  
that there is no passage for smelling; for  
its thinness allows odors to penetrate it,  
as easily as though it were open. The  
beak might very easily be broken, but it  
appears to be jagged by nature so that it  
can cut things with less exertion. But

can air pass around these as though  
they were teeth, although that inside is  
held back by the closed beak, and slip  
into the throat and windpipe?

This bird, which might be named  
Burhychus or Ramphestes from the size  
of its beak, is called *Toucan* by the in-  
habitants of America. See Thevetus,  
chapter 47 of the book just cited, in  
which he says that this bird is the size  
of a pipit or a young pigeon. It must  
be another species to which he refers.  
Both have black feathers except for the  
yellow tail, in which the other has  
feathers of red mixed with black, the  
feathers under the breast becoming yel-  
low, nor am I able to find the flame  
color so characteristic of this one ap-  
pearing in the red feathers at the tip of  
the tail. Ambrose Paracelsus describes this  
bird as similar in body and color to the  
raven, although its beak is somewhat  
yellow, transparent, very light, dented  
like teeth, and of the length and width  
which I have described. I have drawn  
two pictures of this bird, one agreeing  
with the description which John Fer-  
rierius sent me with the beak, the other  
similar to the one described by Thevetus  
and Ambrose Paracelsus in their books.

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GESNER'S DRAWING OF THE TOUCAN

He says of it: "This picture agrees with the beak and the description sent me by John Ferrerius." But the careful old pioneer naturalist played safe by adding another illustration with a more conservative beak.

### THE GREAT NEBULA IN ORION

is shown to be a vast whirl-  
pool of glowing gas

by

Sir William Huggins

in

NEXT WEEK'S CLASSIC OF SCIENCE

## NUTRITION

**Reduction May be More Dangerous Than Obesity**

**O**VERWEIGHT is dangerous to the human body, but improper means of reducing weight may be even more so. Of the many women, who in recent years have adopted ridiculous dietary measures on their own initiative, some have suffered from extreme under-nutrition or ill health, and some even have died. The so-called eighteen-day diet is deficient from every standpoint. These matters were recently discussed by Dr. Clifford J. Barborka, of the Mayo Clinic, Rochester, Minn.

It has been found that 70 to 85 per cent. of persons with diabetes are or have been obese, and that 50 per cent. of persons with high blood pressure are overweight. Many of those with gallstones, abnormalities of the heart, varicose veins, excessive perspiration and eczema are fat, and the surgeon knows that overweight adds to the risk if patients must undergo operation.

However, the condition seems to run in certain families. Then there are certain physiologic causes of increase in weight. The nursing mother tends to grow heavier; so does the patient who is convalescing from an operation or a prolonged illness. Increases in flesh are frequently seen at puberty, in pregnancy, and after the change of life in women.

It is an apparent paradox that certain persons get fat and that others do not on what appears to be equivalent diets. There can be no doubt that obesity is often the result of over-indulgence in food and lack of exercise, but certain persons gain weight on what appears to be a moderate intake of food, or even a restricted diet, and considerable exercise.

*Science News Letter, June 13, 1931*

## MEDICINE

**Must First Find Cause Of High Blood Pressure**

**H**IGH blood pressure is a symptom, not a disease, and no cure can be expected for it until more is known about what causes it, members of the American Medical Association meeting in Philadelphia were told by Dr. N. S. Davis III, of Chicago.

A previous generation of doctors had the same attitude toward fever that the present generation has toward high blood pressure, or hypertension, Dr. Davis said. Formerly, doctors tried to

reduce fever by medicines, without considering the diseases of which it was a symptom. Physicians today are doing the same thing when they concentrate efforts on finding drugs or other means of reducing high blood pressure without trying to determine what disease is giving rise to the symptom of hypertension.

Dr. Davis' paper was based on a four-year study of the effects of salts of calcium as treatment for hypertension. Some of the patients seemed to improve at times and said they felt better, but in spite of this Dr. Davis concluded that the treatment was of little value. His experience emphasized the opinion that the value of any treatment for this condition can be determined only after months or years of trial.

*Science News Letter, June 13, 1931*

## PHYSIOLOGY

**Early Detection of Deafness Will Salvage Whole Life**

**U**RGENT need of discovering defective hearing in very young children, and of salvaging what hearing they have before it is lost forever, was brought before the meeting of the Federation of Organizations for the Hard of Hearing, in Chicago last week, by Dr. Richard O. Beard, of the University of Minnesota.

"Watch the baby of today in his reactions to the electric door or telephone bell," he said, "or to the flash of electric light, to the sight and touch of his many toys, to the taste and odor of his varied diet, to the vocal attentions of his family and his ubiquitous friends."

The young child whose hearing is even partially impaired needs to have intelligent first aid as soon as the handicap is discovered. The tendency of parents to try to hide the fact of a child's defective hearing was deplored by the speaker, who said that such a policy robs the child of a start in life.

Physicians are coming to doubt whether more than a very small percentage of young deafened children are totally stone-deaf, Dr. Beard continued. And a residue of hearing, even though small, may be put to good use in teaching the child to use its voice, to use what hearing it has, to read the lips, and to live a more normal social life. But if the remnant of hearing is not salvaged by proper educational methods, the child who cannot hear distinctly may lose the habit of listening at all, and with disuse the organs of hearing become still further impaired.

*Science News Letter, June 13, 1931*

**IN SCIENCE**

## ASTRONOMY-ARCHAEOLOGY

**Mayas Predicted Eclipses to a Day**

**N**EW RESEARCHES on the astronomical knowledge of the Mayas were presented in Berlin at a session of the Prussian Academy of Sciences by Prof. H. Ludendorff, director of the Astrophysical Observatory at Potsdam.

Prof. Ludendorff has found that the times of the eclipses of the sun and the moon were known with accuracy even before the Christian era. He has succeeded in deciphering pages 51 and 52 of the Maya codex in the Dresden collection and finds that the days of these and other heavenly events correspond exactly with modern tables.

The calculation by Spinden of the difference between Mayan time counting and ours is also verified by this research.

*Science News Letter, June 13, 1931*

## ENTOMOLOGY

**Laboratory Grows Worms That Prey on Jap Beetles**

**W**ORMS that seem to be effective enemies of the destructive Japanese beetle, destroying them while they are still in the grub stage underground, have been successfully reared in large numbers by laboratory methods, reports Dr. R. W. Glaser, of the Rockefeller Institute for Medical Research, in *Science*.

The worms, which belong to the large class known as nematodes, were found infesting beetle grubs in a limited area in New Jersey. In this area the death-rate of the grubs was considerably higher than elsewhere, and it was believed that the worms had something to do with it. Efforts were therefore made to cultivate the new species in the laboratory, and Dr. Glaser was successful in propagating it in large numbers, feeding it entirely on artificially prepared foods.

It is hoped that the new species of worm, reared in quantities, may afford a means for combatting the Japanese beetle pest.

*Science News Letter, June 13, 1931*



# NEW FIELDS

## ECONOMICS-AERONAUTICS

### Herbert Hoover, Jr., to Undertake New Research

**P**RELIMINARY arrangements have been completed for Herbert Hoover, Jr., son of President Hoover, to undertake at the California Institute of Technology, Pasadena, a new field of research, business economics in relation to aeronautics.

Dr. Wm. B. Monro, an institute executive, revealed that Prof. Horace Gilbert, classmate of young Hoover at Harvard, has been negotiating with Mr. Hoover to study in Pasadena. While associated with Western Air Express as radio engineer, Mr. Hoover resided in the city. Mr. Hoover, who was a high ranking student and professor at Harvard, will be a valuable part-time addition to the institute's staff as both economics and aeronautics research have become important divisions of the educational institution.

The research expected to be undertaken by Mr. Hoover will be a new field, Dr. Monro said. With the rapid advance in recent years of aviation, the economic side has not kept abreast. With the Guggenheim Graduate School of Aeronautics of the California Institute of Technology as a center of aviation interest, and the accumulation of economic data by Dr. Monro and professors under him, Mr. Hoover will be in personal touch with the latest developments for research in the new field in which he contemplates pioneering.

*Science News Letter, June 13, 1931*

## PSYCHIATRY

### 90 Per Cent of Mental Ills Called Due to Environment

**P**ROBABLY ninety per cent. of all mental disease is due to environment, rather than heredity, and can be prevented, Dr. Marion Kenworthy, well-known woman psychiatrist of New York, declared before the meeting of the American Psychiatric Association.

Dr. Kenworthy, who has studied children especially, said that psychiatrists regularly see parents handling children

so as to precipitate tantrums, fears and other emotional conditions which may have far reaching results in mental health. Children's behavior problems are more important than rickets and get less expert attention, Dr. Kenworthy believes. Few parents know when to guide and repress a child and when to give it freedom. The psychiatrist urged that parents should learn some of the principles of mental development while their children are very young or even before the children arrive.

Specific ways in which parents may bring up their children to become hypochondriacs were stressed by Dr. David M. Levy of New York. The father whose favorite topic of conversation is his indigestion, and the mother who frets lest her children catch cold or get hurt are brewing trouble, he warned. The child who lives in a sick social atmosphere tends to develop an excessive concern about his body.

Showing how such ideas may dominate a child's mind, Dr. Levy cited one boy who knew every other boy by his ears, merely because his own ears were rather large. Parents should reassure their children about their good points of hair or eyes, and should encourage healthiness and happiness rather than morbid self criticism, Dr. Levy said.

*Science News Letter, June 13, 1931*

## PHYSICS

### Typewriter Found Noisy as Starting Electric Train

**A** TYPEWRITER makes as much noise as an electric train when it starts. This is one of the many interesting results which have been obtained by A. H. Davis of the National Physical Laboratory, England, who has recently been making a study of noises. He compares loudness levels by the use of a tuning fork.

Mr. Davis has found that the noise inside the cabin of an airplane during flight is very much louder than that of an express train. An automobile horn is as loud as a subway train. Experiments in the first and third class compartments of a British train showed that the noise levels were the same when the windows were open, but when the windows were shut the first-class compartment was the quieter.

Loud radio speech made as much noise as a railroad passenger car going at 35 miles an hour. A very noisy restaurant made the same amount of noise as a typewriter.

*Science News Letter, June 13, 1931*

## PALEONTOLOGY

### New Find May be Broken Dinosaur Egg Shells

**D**INOSAUR bones, and what may be bits of dinosaur eggshells, have been found in the hills of Arkansas by S. L. Powell, geologist of Blue Ridge Summit, Pa. He expects to return to his hunting ground this summer, and hopes to clear up the question of whether the limy flakes he found on a former expedition were dinosaur eggshells or not.

In the vicinity where the "egg shells" were found a discovery of one undoubted dinosaur skeleton—probably a plesiosaur—has been made, together with scattered fossils of others. In two spots collections of thin flakes of limy material were found, each collection of fragments being equivalent to what would be yielded by one broken egg.

*Science News Letter, June 13, 1931*

## PHYSIOLOGY

### Advices Deaf to Avoid Annoying Mannerisms

**E**LEVEN annoying mannerisms of deafened persons were described and criticized at the meeting in Chicago of the American Federation of Organizations for the Hard of Hearing by Elizabeth Brand of Dayton, Ohio. Miss Brand spoke from her own experience as a deafened person and as a teacher of lip reading.

Foremost among the mannerisms which she urged her fellow-deafened to avoid was irresponsibility. She said that this lack of responsibility was due to the attitude of hearing persons toward the hard of hearing, but she urged the deafened to take responsibility upon themselves, both individually and as a group.

Other bad habits of deafened persons which she described were apathy; talking too much, or too loud or too softly, getting too near the person addressed; being supersensitive and suspicious; requiring people to scream when lip reading or hearing devices would save this effort on the part of friends and relatives; gesturing; repeating; and exaggerating the speech. This latter fault, which Miss Brand called "an abominable by-product of lip reading," is also a fault of hearing persons when speaking to the deafened. Exaggerated and very slow speech make it harder to read the lips, she explained.

*Science News Letter, June 13, 1931*

## ARCHAEOLOGY

# Beer-Making 8,000 Years Ago

Exhaustive Researches Carried on by a German Archaeologist Show That Bread and Beer Were Twin Staples of Life in Egypt and Babylonia

By FRANK THONE

**T**HE OLDEST inscribed monument on earth is a beer sign.

It is treasured now in the Louvre, in Paris. But when it was carved by some sculptor in ancient Babylonia, long before the flood, it was a solemn memorial to the goddess Nin-Harra. It shows supplicating priests, workmen with pestles for bruising grain, and offerings of meat and beer.

The people were offering to their divinity the best they had, in the hope that she would graciously smile on their fields and insure for the coming season plenty of bread—and also what appears to have been just as important to the dwellers in Babylonia, plenty of beer.

For the most ancient of civilized peoples whose history we know at all, the Babylonians and the Egyptians, were great beer drinkers. When they drew their day's pay, in beer and bread, they got as much of the one as they did of the other. If there was anything extra they took it in beer. Differences in social or political rank were measured in quantity and quality of beer allowed, and the gods got the biggest bottles of the best brew.

The great importance of beer in the high cultures of antiquity has been studied exhaustively and written up in a recent scientific monograph. The author is, most appropriately, a German, Dr. E. Huber of Berlin.

From all imaginable sources Dr. Huber has drawn his material. He has studied the inscribed bricks of Babylonia, the carved stones of Egypt. He has pored over half-obliterated columns of hieroglyphics on papyri from Pharaonic tombs, and searched early Greek poems and histories for references to Hellenic traffic with the "wise land" of the Nile. He has fondled ancient beer-jugs and brewers' apparatus of all kinds in the museums. He has gathered up all the heeltaps of information about

Babylonian and Egyptian beer that have been left by the thirsty centuries.

Brewing is as ancient an art as baking, he finds. The two great uses of grain go back as far as civilization goes, and disappear into the mist of the ages before the dawn of records in writing. To the beer-offering monument to the goddess Nin-Harra he assigns a date of 6000 to 7000 B. C., which is a greater antiquity than many archaeologists will admit to be definitely dateable. But whatever its age, it certainly does definitely indicate the twinship of beer and bread away back into neolithic time.

## Bread Used in Beer-Making

Dr. Huber believes that civilization arose first in the Euphrates-Tigris valley, and that colonists went from there into Egypt in very early days, taking with them their arts and culture, including the knowledge of brewing.

Certainly there is a great resemblance between the fundamentals not only of the brewing art in the two countries but of their whole agricultural stock-in-trade. The earliest grains cultivated in both countries were barley and emmer, the latter a primitive kind of wheat long since relegated to a minor role among the world's cereal crops. Both knew the date palm but neither knew the vine—and wine—until comparatively late.

Throughout their long history, brewers in both lands made beer in much the same way. The similarity between their methods is all the better argument for a common origin, because of one very peculiar step in the process employed by both.

Babylonians and Egyptians alike used specially baked bread as part of the brewers' mash, instead of making the beer directly from malted grain, as at present. The fellahin, or peasants, of modern Egypt still make a mild fermented drink in the same way. It is a direct descendant of their remote ancestors' "heket," with a lineage of six or seven thousand years.

Both Babylonians and Egyptians used



Beer for Babylon's Gods

their two staple cereals in the manufacture of beer, and both made barley the foundation-grain, with admixtures of emmer in varying proportions. The grains were used in three ways: malted, ground without malting, and baked into the "brewers' loaves" already mentioned.

Color and strength of the beer varieties were carried through a very considerable range by varying the proportions of the ingredients, by using lighter or darker strains of grains, by baking the brewers' bread light or making it more crusty and brown, by mixing two different brews together, and in a number of other ways. Both Babylonians and Egyptians often added honey or dates, which would of course increase the alcoholic content considerably.

In Egypt, brewing remained largely a household art throughout the long history of the country, but in Babylonia it passed into the hands of a specialized industrial class at a very early date and home brewing was practiced very little. There were professional brewers there in 5000 B. C., Dr. Huber states.

Among the Babylonians, the brewers were naturally also the innkeepers. Most of them were women. Appropriately enough, therefore, we find the oldest known brewing recipe in the temple of a goddess, Ba-u of Lagash.

But even with the liquor traffic thus nearly monopolized by the gentler sex, there seem to have been the usual difficulties in its regulation. When Hammurabi, the great king of the Semitic folk who conquered the first civilizers, the Sumerians, undertook about 2500 B. C., to codify all existing laws, he provided that any innkeeper who demanded exorbitant prices for beer, or sold beer of inferior quality, "shall be put into water."

## Watery Punishment for Bad Beer

That meant "shall be thrown into the canal." Canals were everywhere in that irrigated country, and the enforcers of the law found it convenient to punish a whole series of crimes and misdemeanors by ducking or drowning. But in this particular case the punishment was made



to fit the crime with a most Gilbert-and-Sullivan-esque appropriateness.

This, of course, applied only to private enterprise, usually on a small scale. But the royal farms and the temple estates also had their breweries to provide beer for workmen, officials and priests, for beer and bread were the staples of life of all classes. Records of estate management, inscribed on clay tables, tell of the share of the grain harvest to be sent to the "brew house," and also of the allotments of beer to the various classes of workmen and officials.

An ordinary Babylonian farm hand got the smallest lot and the thinnest kind: one quart of watered beer a day. Laborers at harder work, such as carpenters, masons and the operators of the innumerable irrigation wheels, got the same quantity, but of the full-strength barley beer. Petty officials got two quarts. College graduates, who had learned the difficult art of writing, got three; thus did learning receive its appropriate reward.

Higher officials and generals in the army got five quarts each day. This rising scale of liquid perquisites of office makes it easier to understand the invariable rotundity of the more important personages pictured on all Mesopotamian monuments. In those old happy, far-off days the phrase "a fat job" really meant something.

It is interesting to note, too, that the ladies lagged no whit behind the men-folks in their consumption of choice brew. The "palace ladies"—members of the king's harem—got just as big an allowance as did the high-brow job holders, three quarts a day each. Evi-



**STATUETTE OF EGYPTIAN BREWER**  
Placed in ancient gentleman's tomb, to insure a beverage supply in the after-world; the objects on the right are beer-bottles, capped with clay cones.



#### THE CUSTOM OF DRINKING THROUGH STRAWS

*Apparently originated in Babylonia, where bent reeds were used as drinking tubes at convivial beer parties.*

dently the Orientals liked 'em plump then just as they do now.

Egyptian ladies got their beer, too. One of Rameses' records shows the delivery, to the priestesses of a certain temple, of 466,308 jugs of beer.

#### The Ladies Liked it Sweet

This beer for the ladies was a special variety, with a large percentage of emmer in the mash; it was probably quite sweet. Even the "poor woiking goil" was favored; in times of shortage beer was provided for working women when there was none for their husbands and brothers.

The gods must have been thirsty spirits, for they always got just as much beer as they did bread. If a man brought an offering of 10 quarts of bread (or 10 quarts of grain) to the temple, he matched it with 10 quarts of beer. If he brought only five quarts of beer, five quarts of bread went with it. This argues a similar proportion on the dinner-tables of mortals, for early peoples always tended to make gods after their own image.

Great feast-days must have been the occasions of real parties in the temples, for records of preparations for feasts have been found that list as many as six different varieties of beer among the supplies laid in. And the priests had to sample all of them. The gods were offended if they didn't.

In both Babylonia and Egypt there was a great variety of brews available. From records as far back as 4000 B. C. Dr. Huber has compiled a list of no less than 19 kinds of beer, and a list

from records 2000 years later is just as extensive.

The Egyptian "beer card" is about as long, but since brewing in Egypt was predominantly a home industry the Egyptian beers are less systematically classifiable. Dr. Huber's list includes only the "basic beers" made from barley and emmer; the sweetened and fortified varieties, with additions of dates, honey, etc., would probably extend it considerably.

Every separate variety had its name. The basic Babylonian term for beer was "bi." To that were added various qualifying words. The ordinary barley beer, such as workmen got, was "bi-se-bar." Thinned out with water, for farm hands, this became "bi-se-bar-us-sa." The very best black barley beer was "se-bar-bi-gug-dug-ga"—which sounds very much like something bubbling out of a jug.

In both Egypt and Babylonia the making of beer always remained a rather primitive and unscientific affair, although it did include the same fundamental steps still used, in a more scientific and sanitary way.

First the mash materials—bruised or ground grain, barley malt, and broken-up loaves of bread—were tramped up with water in a huge crockery vat. The mess was allowed to ferment, usually for only a day or so. Then the liquor was separated out with a sieve, and allowed to stand for a little while longer. In Egypt the brewers kneaded the doughy mash on the sieve while the beer was draining through.

Naturally, with arrangements as primitive as these, a lot of broken grain and



bits of brewers' bread came through the sieve and floated around on top of the beer. For this reason the ancient inhabitants of Mesopotamia invented the practice we still have, of drinking through a straw. They used bent pieces of hollow reed, about three feet long, which they stuck through the unpalatable stuff on top into the clear fluid beneath, and sucked with great relish.

Beer-drinking seems to have been a social exercise in Babylonia, for the inscriptions invariably show at least two of these drinking-reeds in every beer jug. And if people are shown in the act of drinking, almost always there are two of them on opposite sides of the jug, pulling away like Turks at a hookah. Evidently the man with the best pumping apparatus got the bigger share of the beer.

In Egypt tubes were used to some extent, but beer-drinking was more refined. There the beer was drawn off through tubes, but attendants took care of that part, siphoning it out of the storage jars into a large serving vessel. From this it was poured into rather shallow pottery goblets.

The addition of bitter herbs and aromatics of various kinds, corresponding to the modern use of hops, was known to the ancients. The Babylonians sometimes spiced their beer with cinnamon, which doesn't sound at all like a bad idea. Among the things used by the Egyptians was mandragora, a bitter root still listed in our pharmacopeias. This contains a strong narcotic principle, so that it is quite possible that Pharaoh's subjects got an extra kick out of the beer "spiked" with this drug.

#### Warnings Against Demon Beer

The effects of looking too long on the beer when it is brown were not unknown to the ancients. Babylonian records tell of "walking unsteadily, and seeing several things where there is but one."

One classic Egyptian homily, addressed to a young student, is positively lyric in its alarm:

"They tell me you have forsaken your books  
You have given yourself over to pleasure  
You go from party to party  
Beer-smell every evening  
Beer is causing people to avoid you."

The younger generation has evidently been going to the dogs for at least five thousand years.

Egyptians interpreted their foreign-derived word "heket" to mean "captivity of the heart," conceiving beer to contain a demon which seized the drinker's heart if he swallowed too much. They had many charms to be uttered before drinking, to keep this "demon beer" in check.

Egyptian tomb-inscriptions set forth pious wishes for welfare in the world to the west of the desert. Funeral bills of fare, though they gave the king rich feasts and provided the poor man with no more than bread and beans, democratically allowed both plenty of beer.

The usual formula calls for "a thousand of bread, a thousand beers." This is invariable in the earliest inscriptions. Later, when Egyptians traveled more and imported foreign goods, there were additions of wine, of cool water from the sources of the Nile, and sometimes the bereaved survivors also added a prayer for milk.

But the two things they never forgot were bread and beer.

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Science News Letter, June 13, 1931

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#### PSYCHOLOGY

### Students Influenced by What "Everybody Thinks"

ONE out of three adults will change his opinion on controversial social or ethical matters to what he learns that other people think. But students in high school and college are even more suggestible. More than half of each of these groups were influenced by the group opinion.

These figures were obtained by C. H. Marple, working with Dr. Norman C. Meier at the University of Iowa and reported by them to the Midwestern Psychological Association. They asked 900 persons to express their opinions independently on the various topics, which included matters of general, social, economic, and ethical interest. Three groups were represented, including 300 high school seniors, 300 college seniors, and 300 representative adults.

After a lapse of one month, the same questions were given again. For 300, representing all three groups, the questions were in their original printed form. For another 300, the questions

were marked to show what was the consensus of opinion of 900 persons. For the third group of 300, the questions were marked to show the opinion of experts or authorities.

The opinion of experts was not nearly so influential as that of the group of 900. The changes of opinion among those who saw the expert opinions amounted to 51 per cent. for the high school students, 45 per cent. for the college students, and 34 per cent. for the adults. The shifting under the influence of group opinion was 64 per cent. for the high school students, 55 per cent. for the college people and 40 per cent. for adults. The shifting when the papers were not marked was very small in comparison, ranging from less than 14 per cent. for adults to about 17 per cent. for the high school seniors.

*Science News Letter, June 13, 1931*

#### ARCHAEOLOGY

### Prehistoric Iroquois Camp Explored by Scientists

**A** SITE near Syracuse, N. Y., where prehistoric Iroquois Indians once held camp has been explored by Prof. Thorne Deuel, of Syracuse University, it has just been announced.

In the camp refuse, the expedition found decorated sherds of Iroquois pottery, including some which human portraits on them. The excavators also unearthed heavy polished celts or tomahawk heads, and a fragment of a square-rimmed stone pipe which may have figured in council meetings of the tribe. Some of the small, finely chipped flint points which were used on the ends of projectiles were other discoveries, as well as hammerstones, bone awls and a considerable quantity of charred corn.

The line where the palisade of the camp stood can be traced by the charred points of the stakes, still in place, Prof. Deuel found. The interior of the wood is rotted. The charred exterior indicates that the Indians may have used this method of preserving the wood.

The site appears to have been inhabited by Iroquois of a late period, but still uninfluenced by European contacts, the expedition reported.

*Science News Letter, June 13, 1931*

While ordinarily regarded as a childhood disease, diphtheria sometimes attacks middle-aged and old persons with fatal results.

#### CHEMISTRY

## Delicate Cellulose Destroyed By Wood Pulping Methods

**T**HERE ARE many losses of fiber in the processes of pulping and paper-making that are hard to locate and control. By chemical test it is known that 60 per cent. of the weight of wood is potential pulp fiber; yet the actual paper as it is reeled off the machine often weighs 40 per cent. or less of the original wood weight.

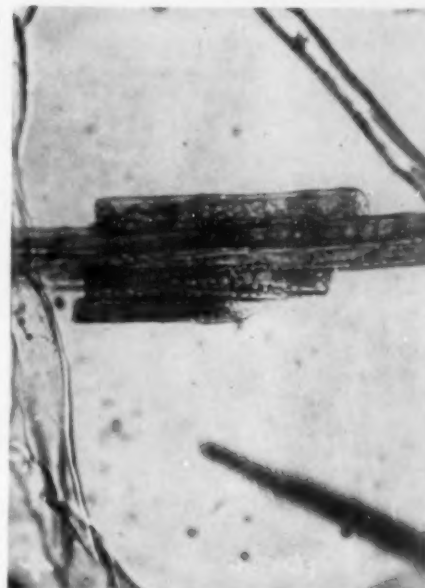
This means that at all American mills in a year the cellulose equivalent of some 1,000,000 cords of wood goes floating into the sewers as fibrous waste. Where and how the losses occur has been broadly indicated by chemical studies supplemented recently by microscopical investigations at the U. S. Forest Products Laboratory, Madison, Wis.

Among the paper-making parts of wood are some very stable and chemically resistant cellulose and some other cellulose-like substances that are easily hydrolyzed or broken down into sugar during the cooking process through which all the material must pass. This is the greatest single cause of loss, averaging about 50 per cent. of the weight of the wood. The remainder of the loss is due in large part to the waste of cellulose from the medullary rays of the tree, according to a report of microscopical studies made by G. J. Ritter, F. A. Simmonds, and P. R. Eastwood, of the Forest Products Laboratory.

The medullary ray is that part of the wood which, in oak particularly, shows up as smooth, light-colored flakes on quarter-sawed surfaces. Though not conspicuous in most woods, the medullary structure makes up from 7 to 11 per cent. of the volume of the trunk in softwoods and from 15 to 22 per cent. of the volume of the trunk in hardwoods.

It is this large bulk of medullary ray cellulose which the microscope has shown to be particularly susceptible to disintegration in pulping and paper-making. By examining samples before and after each step it was found that losses of the material occur at virtually every stage of the chemical and mechanical processes the fiber must go through.

In the opinion of Dr. Ritter, there are also losses of longitudinal fiber, but it is of minor importance compared to the



#### USUALLY A TOTAL LOSS

*A microscopic photograph of the ray cells of spruce magnified 100 diameters. The rays, which make up from seven to eleven per cent. of the volume of wood, are usually a total loss in chemical pulping processes.*

ray-cell loss. In general, he believes, our present-day methods of wood pulping are too severe for the more delicate wood components, and that great potentialities of saving await the development of a milder chemistry and processing.

*Science News Letter, June 13, 1931*

#### ENGINEERING

### Moving Trains Weighed By New Giant Scales

**S**CALES weighing up to 400 tons, strong enough to withstand the passage of a locomotive over them, are now being used on railroads, according to a report submitted to the National Conference on Weights and Measures by A. Bousfield, chief engineer of E. and T. Fairbanks and Company.

The Pennsylvania and New York Central railroads each own scales with 75-foot sections suitable for weighing, while in motion, the longest and heaviest cars now used by the railroads.

*Science News Letter, June 13, 1931*

## PSYCHIATRY

# Many Failures do not Stifle Humanity's Desire to Marry

**W**HY HUMAN BEINGS are so eager to get married when they can see so many promising marriages going on the rocks all around them was explained before the American Psychiatric Association meeting in Toronto last week by Dr. C. P. Oberndorf, psychoanalyst of New York City.

Back of every longing for marriage, Dr. Oberndorf said, are vestiges of a childhood tendency to an attachment for the parent of the opposite sex.

"This tendency is known as the Oedipus complex," he added, "a term so popularized in America that it has descended to the musical comedy stage. Every person entering monogamous relationship seems impelled by the desire to possess all for himself one person of the opposite sex in the situation which, as a very young child, appeared so enviable to him. This applies to the repeaters of Hollywood leading their fourth or fifth mate to the altar as well as to the youthful couple."

The child's unconscious impressions and desires regarding married life are

doomed to partial disillusion in actual marriage, the psychoanalyst continued. For neither the partner nor the situation comes up to the childish ideal which the father or the mother had inspired. If the individual has not outgrown normally his infantile attachments, he has difficulty in meeting the problems of married life with its continual adjustments and self-sacrifices.

"The degree to which the Oedipus complex has waned in both parties is the most important single psychological factor entering into the success or failure of the average marriage," Dr. Oberndorf has found. "Popular observation tends to corroborate this notion, attributing the unhappiness of many a young couple to 'too much mother-in-law' especially when that individual happens to be 'his' mother. Censure usually attaches to the mother-in-law, but without the unconscious persistence of a mother attachment in the young man her interference would be short-lived."

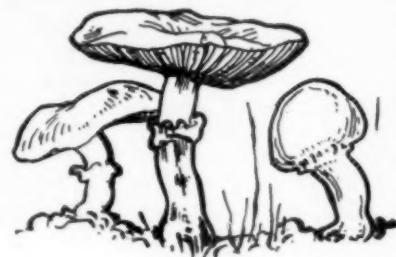
The most helpful function which the psychoanalyst can perform in these matrimonial tangles is to bring to consciousness those unconscious factors which are operating in a neurotic manner to produce social discord, Dr. Oberndorf concluded. He added that the analyst cannot either keep the couple together or advise separation.

*Science News Letter, June 13, 1931*

## BOTANY

## Nature Ramblings

By FRANK THONE



Toadstools

**A**FTER the warm spring rains the woods and fields afford many fine-flavored mushrooms which go to waste because people are afraid of being poisoned. Contrariwise, many people get bad stomach-aches, if no worse, because they rely on an "infallible" test to "tell mushrooms from toadstools."

In the first place, there is no difference between "mushroom" and "toadstool." They are simply two synonymous words for the same class of objects, and refer to the shape of the plants, not to their poison or lack of it. "Mushroom" is "toadstool," and "toadstool" is "mushroom."

In the second place, and more important, there is no test with silver spoon, or salt, or sinking in water, or peeling cap, that is worth anything whatever. By any of these tests, the deadliest mushroom may appear perfectly innocent, and the best mushroom may be unjustly condemned. One must simply know what the good and bad mushrooms look like.

The commonest of the poisonous mushrooms are very plainly marked. They have a ring, or ragged veil, hanging round the stem, and a cup at its base. If both ring and cup are present, that mushroom is absolutely deadly, and there is no cure or antidote. If there is a ring but no cup, or a cup but no ring, the mushroom is safe. The commonest edible mushroom has a ring but no cup.

One of the signs of a safe mushroom (or toadstool) is the blackening of the gills, under the cup. This blackening is incorrectly claimed to be a sign of poisonousness; though it is a character of our commonest edible species, while the gills of the deadliest mushroom are always innocently white.

*Science News Letter, June 13, 1931*

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## VITAL STATISTICS

# 474-Year-Old Family Record Analyzed by Chinese Student

Statistics Reveal Higher Mortality For Chinese Family Than That Given by Earliest Official English Life Table

**V**ITAL STATISTICS of a Chinese family, faithfully kept for 474 years, have been subjected to statistical examination by a modern Chinese student, I-Chin Yuan, at the School of Hygiene and Public Health, the Johns Hopkins University, Baltimore. Mr. Yuan's results will be published in the forthcoming issue of *Human Biology*.

It has long been the custom in China, Mr. Yuan explains, to keep detailed accounts of births, marriages, length of life, etc., particularly of the men, in all Chinese families of any standing. Such a family account giving the vital statistics of a well-established household in the neighborhood of Canton was placed in his hands some time ago, and he has made a detailed statistical study of life-expectancies of this representative sample of the Chinese population, covering as it does nineteen generations, from the year 1365 to 1849.

Only children who lived to be more than fifteen years old are taken into account in these Chinese family records, so that Mr. Yuan's study was limited to this group in the whole population. In the 474 years recorded in the book he studied, there were 4,629 deaths. Age at death is recorded for 3,844, or 83 per cent.

In general it was found that at the younger ages the mortality rate was higher among the females than among the males but this relation was reversed when the older ages were considered. The only exception found was in the seventeenth century, which was a time of long and bloody wars in China. Then the death rate for males was high in the younger ages also, which of course is to be expected. The greater expectancy of life on the part of older women more than outbalances the high mortality among girls, so that taken as a whole the women of this group had markedly longer lives than the men.

Mr. Yuan compared his record with the earliest official English life table, and found that for the time covered the mortality rate for both men and women

was lower than that for Chinese as represented by the family he studied. Survivorship and expectation of life are correspondingly greater for the Occidental group.

"It is interesting," Mr. Yuan concludes, "to note that Farr's table shows several similar facts. The female mortality rates are higher than those of the male at the younger ages. The survivorship is more favorable for the female at the higher ages than for the male. The expectation of life of the female is greater at every age."

*Science News Letter, June 13, 1931*

## PSYCHIATRY

## Movies Used for First Time As Aid to Psycho-Analysis

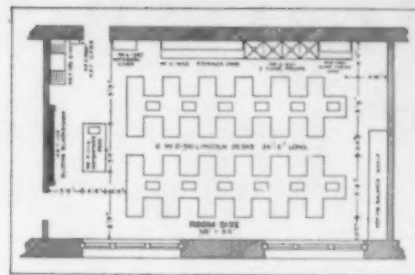
**T**HE FIRST use of moving pictures as an aid to psycho-analysis in the study of personality disorders and retarded mental development was reported at the recent meeting of the American Association for the Study of the Feeble-minded in New York. Dr. L. Pierce Clark of Central Islip Hospital, New York City, presented a film of the dramatization by two of his patients of their problems, and discussed the role of this new psychiatric method.

In child analysis, Dr. Clark explained, the child dramatizes his problem. This is used as the basis for the interpretation of his difficulties. The play which the child acts is considered symbolic of his conflicts. It is thought that moving pictures used in this way will give the psychiatrist a better understanding of the nature and causes of mental arrest or feeble-mindedness.

"In presenting for the first time child analysis in dramatization by the motion picture," Dr. Clark said, "we hope to bring out the manner of behavior of certain neurotic children who symbolically act or reenact their conflicts in analytical sessions."

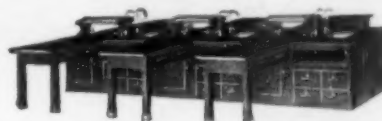
*Science News Letter, June 13, 1931*

Cancer ranks second among causes of death in the United States.



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# • First Glances at New Books

## Biography

**GALILEO, SEARCHER OF THE HEAVENS**—Emil Namer—transl. by Sibyl Harris—*McBride*, 298 p., \$3.75. Here is a story that grows more and more interesting for the present generation, the story of a great thinker who observed and analyzed the world instead of turning his back to it and thus laid the foundation of modern science. Mindful of the cruel death of Giordano Bruno, Galileo prudently described his great astronomical and dynamical discoveries for long without suggesting any inferences unpalatable to the Inquisition. The painful story of his losing struggle with the political forces of his time is clearly portrayed in this fine biography. Galileo heroically kept up his continuous flow of fundamental discoveries in the midst of constant uncertainty, thanks to the encouragement of friends—among them, curiously, the cardinal who as Pope later had to force Galileo's imprisonment.

*Science News Letter, June 13, 1931*

## Sociology

**THE FAMILY**—Edward B. Reuter and Jessie R. Runner—*McGraw-Hill*, 615 p., \$4. A collection of source material by a great number of prominent writers on a wide variety of aspects of a familiar problem.

*Science News Letter, June 13, 1931*

## Engineering

**PROCEEDINGS OF THE THIRTY-THIRD ANNUAL MEETING, AMERICAN SOCIETY FOR TESTING MATERIALS, Vol. I**, 1336 p., 15 pl.; **Vol. II**, 1085 p. Volume I contains committee reports, new and revised standards, and tentative revisions of standards; volume II contains technical papers presented at the society's Atlantic City meeting in 1930.

*Science News Letter, June 13, 1931*

## Psychology

**THE ART OF STUDY**—T. H. Pear—*Dutton*, 117 p., \$1.50. Very helpful to young students.

*Science News Letter, June 13, 1931*

## Public Health

**YEARBOOK 1930-1931** — *American Public Health Association*, 320 p., \$3. Public health workers will welcome this book, the first yearbook published by the Association. It gives much useful information never before easily located, including the committee reports of the 59th annual meeting of the Association,

in 1930, the constitution, objectives and history of the Association, and list of members.

*Science News Letter, June 13, 1931*

## Exploration

**UNDER THE NORTH POLE**—Sir Hubert Wilkins—*Brewer Warren and Putnam*, 347 p., \$3. The commander of the newest and most daring, and at the same time scientifically the most promising of North Pole ventures here tells of his plans, preparations and hopes.

*Science News Letter, June 13, 1931*

## Medicine

**NERVOUS INDIGESTION**—Walter C. Alvarez—*Hoebner*, 297 p., \$3.75. This splendid book is intended primarily for medical students and physicians, but it is not technical and might also be read with profit by patients who suffer from nervous indigestion.

*Science News Letter, June 13, 1931*

## Psychology

**PERSONALITY**—A. A. Roback—*Sci-Art, Cambridge*, 144 p., \$1.25. A non-technical summary of the scientific research in this field. The author believes that personalities are both born and made, and here gives some advice on re-making. An excellent bibliography is appended.

*Science News Letter, June 13, 1931*

## Economics

**SHIP MANAGEMENT AND OPERATION**—H. S. Perry—*Simmons-Boardman* 310 p., \$4. The author undertakes, with a considerable measure of success, to give a complete statement in one volume about ships, ship management and ship operation—architecture, economics, personnel problems, interaction with national policy.

*Science News Letter, June 13, 1931*

## General Information

**OFFICIAL YEARBOOK OF THE COMMONWEALTH OF AUSTRALIA, 1930**—C. H. Wickens—*J. H. Green, Government Printer, Melbourne*, 806 p., 7s 2d. A report of the year's progress in economics, science and other fields in the great southern commonwealth.

*Science News Letter, June 13, 1931*

## Biology

**ESSENTIALS OF BIOLOGY**—W. H. D. Meier and Lois Meier—*Ginn*, 529 p., \$1.68. A textbook suitable for use in normal and secondary schools.

*Science News Letter, June 13, 1931*

## Ornithology

**THE BOBWHITE QUAIL**—H. L. Stoddard—*Scribner's*, 559 p., 69 pl., \$6. All sorts of people, ranging all the way from sportsmen who hunt the bobwhite to bird-lovers who think shooting is a sin, will welcome this thoroughly exhaustive yet thoroughly readable book about the most charming of American game birds. The author has had unusual opportunities for the study of the bobwhite and has made the most of them. His knowledge is encyclopedic: life history, food habits, diseases and enemies, management on preserves and rearing on quail farms—these are only a few samples of the dozens of topics treated.

*Science News Letter, June 13, 1931*

## Industry

**THE WONDERFUL STORY OF INDUSTRY**—Ellen Friel Baker—*Crowell*, 308 p., \$2.50. Accounts of the making of shoes, paper, rubber, sugar and a lot of other things, told as conversations between a boy named Charlie and an astonishingly well-informed grownup.

*Science News Letter, June 13, 1931*

## Agriculture

**YEARBOOK OF AGRICULTURE: 1931**—*Government Printing Office*, 1113 p., \$1.50. The 1930 drought, the economic status of American agriculture, an alphabet of crops from Abacá to Wool, and half a thousand pages of information-crammed statistical tables feature this year's official summary of the U. S. Department of Agriculture.

*Science News Letter, June 13, 1931*

## General Science

**ABSTRACTS OF THESES: SCIENCE SERIES, VOLUME VII**—*University of Chicago Press*, 420 p., \$3. With this publication of abstracts of doctors' theses for 1928-1929, the University of Chicago continues a praiseworthy practice that might profitably be followed by all institutions granting higher degrees.

*Science News Letter, June 13, 1931*

## Botany

**A FIELD KEY TO THE GENERA OF THE WILD AND CULTIVATED HARDY TREES OF THE NORTHEASTERN UNITED STATES AND CANADA**—Mary Franklin Barrett—*Independent Press, Bloomfield, N. J.*, 40 p., 35c. A compact artificial key, not too technical, running trees and larger shrubs to their genera; seems to work well.

*Science News Letter, June 13, 1931*